

Exhibit 5

Expert Rebuttal Report
of Professor Alan Manning
(January 12, 2018)

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF NEVADA

IN RE:

Case No.: 2:15-cv-01045-RFB-(PAL)

Cung Le, Nathan Quarry, Jon Fitch, Brandon Vera,
Luis Javier Vazquez, and Kyle Kingsbury,
on behalf of themselves and all others similarly
situated,

CLASS ACTION

Plaintiffs,

vs.

Zuffa, LLC, d/b/a Ultimate Fighting Championship
and UFC,

Defendant.

EXPERT REBUTTAL REPORT OF PROFESSOR ALAN MANNING

January 12, 2018

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Background

1. I am a Professor of Economics at the London School of Economics. I am a labour economist who has published over 50 articles in peer-reviewed journals. I was chair of my department from 2009-2012 and an editor of the *Journal of Labor Economics* from 2004-2011. In 2014, I was elected a Fellow of the Society of Labor Economists. My CV is attached as Exhibit A. It contains, among other things, a list of the cases in which I have served as an expert witness over the last 4 years. I am being compensated at a rate of \$750 per hour for my work in this case. None of my compensation is contingent on the outcome of this litigation.

Assignment

2. In this litigation, Dr. Hal Singer has analysed Zuffa's alleged under-compensation of its fighters using "labour share" (or "wage share"), that is, by assessing the *percentage* of the revenues from MMA events that Zuffa paid to its fighters in the actual world and the *percentage* of the event revenues that Zuffa would have paid its fighters if not for the alleged anticompetitive conduct being challenged in this litigation.¹ Dr. Andrew Zimbalist has similarly relied on wage share in his analysis.²
3. Drs. Oyer and Topel have criticized the analyses of Drs. Singer and Zimbalist by claiming that the right measure of compensation is wage *level*—compensation to fighters measured in *dollars*—not wage *share*—compensation measured as the percentage of event revenue Zuffa paid its fighters.³ Both Dr. Oyer and Dr. Topel make sweeping claims regarding the use of wage shares. Dr. Oyer opines that wage shares are "not generally accepted in the field of labor economics as a method for determining compensation in a competitive labor market. . . ."⁴ Similarly, Dr. Topel asserts that "standard economic models of competitive labor markets make predictions about the level of worker pay, not about worker pay as a share of revenue."⁵
4. I was asked to review and evaluate the criticisms of Dr. Singer's and Dr. Zimbalist's use of "labour share" or "wage share" made in the reports of Drs. Oyer and Topel.

Opinion

5. My opinion can be summarized in two parts:
 - (1) Wage share can be an appropriate way for a labour economist to analyse compensation.
 - (2) Wage share is an appropriate way to analyse the compensation of MMA fighters in this case.

¹ See Expert Report of Hal J. Singer, Ph.D. (Aug. 31, 2017) (hereinafter "Singer Report"), Sections III.D.1, V.A.

² See Expert Report of Andrew Zimbalist in *Cung Le, et al. v. Zuffa, LLC* (Aug. 30, 2017) (hereinafter "Zimbalist Report"), Sections V.A-C.

³ See Expert Report of Paul Oyer (Oct. 27, 2017) (hereinafter "Oyer Report"), Sections V, VII; Expert Report of Professor Robert H. Topel (Oct. 27, 2017) (hereinafter "Topel Report"), Sections VI, VII.A, XVII.C.

⁴ Oyer Report, ¶30.

⁵ Topel Report, Section VI.B.

6. Drs. Oyer and Topel argue that the “best practice”—indeed, the *only* acceptable practice—involves estimating equations with wage level rather than the wage share as the dependent variable.⁶ For the reasons set forth below, they are incorrect. In particular, use of wage share is appropriate when three circumstances obtain: (1) the goal is to compare compensation to marginal revenue product; (2) sufficient firm-level information is available to compute wage share; and (3) it is possible to obtain a reasonable estimate of the part of a firm’s revenue that can be ascribed to the activities of a particular worker or group of workers.⁷ The criteria are met more often in sports than in most other settings and, as explained below, they are met for MMA fighters in this legal action.

I. Wage share can be an appropriate way for a labour economist to analyse compensation.

7. Drs. Oyer and Topel argue that the level of earnings (or perhaps the log of earnings) is the only appropriate measure for evaluating compensation.⁸
8. Dr. Oyer discusses what he calls “Mincer Regressions” in which the dependent variable is the log of compensation and makes the claim that “Mincer regressions are the core tool of analysis of labor markets generally,”⁹ the implication being that Dr. Singer’s use of fighter wage share deviates from the “best practice” as defined by labour economists. There are two main reasons why Dr. Oyer’s opinion is incorrect:

(A) The appropriate way to analyse compensation depends on the question being asked.

(B) The appropriate way to analyse compensation depends on the data available.

A. *The appropriate way to analyse compensation depends on the question being asked.*

9. When labour economists use a Mincer regression with the level of compensation (or some variant of that) as the dependent variable, they are most commonly providing a descriptive analysis of the factors that determine earnings. A classic example would be the large academic literature on estimating the rate of return to education, asking the question, “How much more might an individual expect to earn if he or she acquires an extra year of education?” To answer that question, one wants the best possible model of the determinants of level of earnings. In that case, it is natural to use the level of earnings as the variable of interest as one is interested in the level of earnings.
10. But, in this litigation, the question to be considered is different. It is, “How do the earnings of fighters compare to what they would have earned in a competitive market?” One is seeking a comparison so it is natural that this leads to a choice of variable that compares, as best one is able to do, actual compensation with what we would expect fighters to earn in a competitive market.

⁶ See Oyer Report, Sections V.A-B; Topel Report, Section VI.B.

⁷ This third criterion is satisfied if a firm’s revenue—such as event revenue in MMA—is proportional to the marginal revenue product of a worker or group of workers—for example, a fighter or group of fighters in MMA.

⁸ See Oyer Report, Sections V.A-B; Topel Report, Section VI.B.

⁹ Oyer Report, ¶ 21.

11. Drs. Oyer, Topel, Singer, and I all agree that in a perfectly competitive market, workers would be paid their marginal revenue product of labour (MRPL or MRP).¹⁰ If data on the marginal revenue product were available a direct comparison with earnings would suffice to decide whether there were anti-competitive practices and how much compensation fighters would receive in a competitive market. It is important to realize that in this world with ideal data, it would not be the level of compensation that would be the variable to be explained (as the reports of Drs. Oyer and Topel claim) but the wage relative to the marginal revenue product of labour.
12. Dr. Oyer's claim that "economists doing empirical analysis of earnings typically look at the *level* of pay . . . because it is a better proxy for the value the worker adds,"¹¹ is not helpful for addressing the question in this litigation. To assess whether this labour market is competitive one needs to be able to compare the earnings of the fighters to the value that they add, *i.e.*, an analysis of pay alone is insufficient.
13. This rationale is recognized in the existing literature. One well-known survey by Boal and Ransom discusses in section 5.1 that "[a]n omnibus test for monopsony power therefore compares estimated values of the MRP, perhaps from a production function, with actual wages,"¹² and goes on to discuss various attempts to do that, most of them from sports.¹³ The appropriate focus of analysis being a comparison of compensation with MRP is very clear.

B. *The appropriate way to analyse compensation depends on the data available.*

14. The ideal data for a case of this type would be accurate information on both earnings and the marginal revenue product of fighters so one—earnings—could be compared to the other—marginal revenue product. Direct measures of the marginal revenue product are very rare. As a result, typically, one has to rely on rough estimates. But in many data sets there is no firm-level information that could plausibly be used even to begin to estimate the marginal revenue product of labour.
15. This absence of appropriate data is the case with many of the studies to which Dr. Oyer refers when arguing that labour economists do not use wage share. But this predicament represents a necessity, not a choice, because the requisite data are not available.
16. Dr. Oyer refers to a discussion in the Boal and Ransom survey paper of a study of teacher pay by Beck which uses total compensation as the outcome.¹⁴ This is a highly selective representation of the papers, many from sports, discussed in the Boal and Ransom survey. But Beck's study is of teachers in the public sector where education is free so there is no way to compute a "wage share" even if the author had wanted to do so (because there are no "revenues" with which to compare wages).¹⁵ Boal and

¹⁰ See Oyer Report, ¶¶ 15-18; Topel Report, ¶ 130; Singer Report, n. 454, ¶ 288.

¹¹ Oyer Report, ¶ 12.

¹² William M. Boal and Michael R. Ransom, *Monopsony in the Labor Market*, Journal of Economic Literature (1997), at 99.

¹³ See Boal and Ransom, at 99-102.

¹⁴ See Oyer Report, ¶ 27 (citing Boal and Ransom, at 103-04).

¹⁵ See Boal and Ransom, at 103-04.

Ransom recognize this when they write, “The measurement of outputs may be particularly difficult in public or private service sectors (*e.g.*, education, nursing).”¹⁶

17. Dr. Oyer cites two papers by Hirsch and Schumacher on nurse pay but fails to note that these studies do not contain any variables that would allow one to compute something akin to wage share if one wanted to do so.¹⁷ In both cases, the primary data used for earnings comes from the Current Population Survey (CPS).¹⁸ But the authors themselves admit this data is far from perfect, *e.g.*, their 1995 paper states that “the primary disadvantage of the CPS is that it lacks information on . . . employer characteristics apart from industry (hospital, nursing home etc.) and sector (private, federal, state or local).”¹⁹
18. Dr. Oyer cites a paper by Naidu on the impact of labour laws in the post-bellum South in the U.S., but again fails to note that the data sets used do not allow one to compute a variable akin to wage share.²⁰ The same is true of the study by Kleiner and Park on the pay of dental hygienists²¹—the data on earnings there come from the American Community Survey which lacks the same information on employer characteristics as the CPS noted above.²²
19. Dr. Oyer cites a book I published in 2003 entitled “Monopsony in Motion,” pointing out that “there are no regressions or tables in the book that use labor share of revenue . . . as any part of the empirical analysis.”²³ This is true. But what Dr. Oyer does not note is that this was not a choice, but rather a necessity due to the lack of available data. The data sets analysed in that book—summarized, for the most part, in the Data Sets Appendix—are individual data sets containing only very limited information on employers—their industry and, sometimes, their size.²⁴ But they contain no variable that would allow computation of wage share.
20. In fact, Dr. Oyer fails to give a single example in which a researcher was interested in comparing compensation with marginal revenue product and could have used worker wage share in an empirical investigation but chose not to do so.
21. Wage share compares earnings to the average revenue product of labour. The average revenue product of labour (“ARPL”) is not the same as the marginal revenue product but there is often a tight relationship between the two in commonly used economic models. Consider a firm that has a revenue function of Cobb-Douglas form $R = AN^\alpha$

¹⁶ Boal and Ransom, at 99-100.

¹⁷ See Oyer Report, ¶ 25 (citing Barry T. Hirsch and Edward J. Schumacher, *Monopsony Power and Relative Wages in the Labor Market for Nurses*, Journal of Health Economics (1995); Barry T. Hirsch and Edward J. Schumacher, *Classic or New Monopsony? Searching for Evidence in Nursing Labor Markets*, Journal of Health Economics (2005)).

¹⁸ See Hirsch and Schumacher (1995), at 449; Hirsch and Schumacher (2005), at 976.

¹⁹ Hirsch and Schumacher (1995), at 451.

²⁰ See Oyer Report, ¶ 26 (citing Suresh Naidu, *Recruitment Restrictions and Labor Markets: Evidence from the Post-Bellum US South*, Journal of Labor Economics, (2010) at 413-45); Naidu, summarizing data sets used at 421, 430, 437.

²¹ See Oyer Report, ¶ 26 (citing Morris Kleiner and Kyoung Won Park, *Battles Among Licensed Occupations: Analyzing Government Regulations on Labor Market Outcomes for Dentists and Hygienists*, NBER Working Paper 16560 (2010)).

²² See Kleiner and Park, at 14.

²³ See Oyer Report, ¶ 22 (citing ALAN MANNING, *MONOPSONY IN MOTION*, Princeton University Press (2003)).

²⁴ See MANNING, at 369-78.

where N is the level of employment and A represents other factors that influence total revenue. In this case the marginal revenue product of labour can be written as $\alpha \frac{R}{N}$ *i.e.*, is proportional to the average revenue product of labour so that an analysis of how measures of labour market competitiveness (e.g., the foreclosure share variable in Dr. Singer's analysis) change the wage share would be the best approach to take, and this is very similar to the approach taken in Dr. Singer's report.²⁵ Simply seeing how wage levels vary with a measure of labour market competitiveness—as recommended by Drs. Oyer and Topel—would lead to invalid conclusions if factors influencing the revenue function are not controlled for in the regression and these are correlated with how labour market competitiveness varies.

22. In many situations where one could compute worker share, it is often at too aggregated a level to be useful as a measure of compensation relative to the marginal revenue product. For example, a firm may have many thousands of workers and the only available information on firm revenue may derive from aggregated accounts. A case in point is the *High Tech Employee* case (a recent high-profile labour antitrust case in which I myself submitted an expert report for the plaintiff class). Dr. Oyer refers to expert analysis in *High-Tech*, arguing that the plaintiffs' expert used the log of compensation rather than worker share as the dependent variable.²⁶ But Dr. Oyer fails to note that there would have been no data measuring the contribution to firm revenue of the class of high-tech employees in that case (the available revenue data consisted of, e.g., Apple's total global corporate revenue). Therefore, it would not have been possible to construct a wage share variable comparable to the wage share variable used by Dr. Singer in this case (which, as explained below, is constructed using event-specific revenue data).
23. To summarize, use of wage share is appropriate when, as in this case, one is interested in comparing compensation to marginal revenue product; when one has sufficient firm-level information to compute wage share; and when one can reasonably measure the part of a firm's revenue that can be ascribed to the activities of a particular worker or group of workers.²⁷ It is typically hard to meet these criteria but sports is one area where it is much easier than most. The next section explains why these conditions are met in particular for MMA fighters.

II. Wage share is an appropriate way to analyse the compensation of MMA fighters in this litigation.

24. The availability of data about event revenue allows the computation of fighter share. And fighters are not anonymous and interchangeable as workers are in many labour markets. One typically does not care about who are the wait staff when eating a meal in a restaurant. But one does care about who is on the bill for an MMA fight—the fighters are people with media articles written about them, and often Wikipedia pages. It is reasonable to conclude that the fighters are the key workers in the event that the customers are paying to watch and so play an important role in generating event

²⁵ See Singer Report, Sections III.D.1, V.A., Table 6.

²⁶ See Oyer Report, ¶¶ 43-44 (discussing *In re: High Tech Employees Antitrust Litigation*).

²⁷ As noted above, this third criterion is satisfied if a firm's revenue—such as event revenue in MMA—is proportional to the marginal revenue product of a worker or group of workers—for example, a fighter or group of fighters in MMA.

revenue. And the marginal revenue product of an MMA fighter is plausibly proportional to event revenue.

25. The reasoning that supports this conclusion is the following. Economists often make a distinction between the marginal physical product—the physical act of working—and the marginal revenue product—how much revenue is generated by the physical labour.
26. In the case of MMA fighters the marginal physical (very physical in their case) product is the fight. This is the same however many people are paying to watch and the amount that they pay. But the marginal revenue product will change with the number of people watching and the amount they pay.
27. If revenue for the fight is twice as large then the MRPL is twice as high and fighter compensation in a competitive market would be twice as high. So the marginal revenue product will be proportional to the event revenue.²⁸
28. The implication is that it is reasonable to think that an investigation of how fighter share varies with a measure of the competitiveness of the market is an appropriate way to analyse the compensation of MMA fighters. Indeed, as noted above, Dr. Topel's own regression analyses confirm that fighter compensation varies with event revenue.²⁹
29. The key issue that arises, then, is how best to control for event revenue. Dr. Singer did so by using wage share as the dependent variable,³⁰ which reasonably assumes proportionality between event revenue and compensation in a competitive market (or at least a more competitive market than the actual world). Dr. Topel instead used wage level as the dependent variable and included event revenue as an independent variable.³¹
30. Dr. Singer's approach is reliable and Dr. Topel's is not. While event revenue is plausibly proportional to marginal revenue product for the reasons given earlier, it is not a perfect measure. If one then uses event revenue as a regressor as is done by Dr. Topel,³² this imperfection in event revenue as a measure of marginal revenue product will bias the estimated coefficients in the regression. The technical term used by econometricians for this problem is "endogeneity" or "measurement error"³³ in an explanatory variable. By introducing an explanatory variable that can only measure MRP with significant error, Dr. Topel potentially introduces bias into *all* of his

²⁸ The identity of the fighters participating in an event can make a great deal of difference to how much revenue it generates. The recent fight between Floyd Mayweather and Conor McGregor is illustrative. Substituting two other fighters in their place would have been expected to generate far lower revenues. See Steven Marrocco, *Showtime: Floyd Mayweather vs. Conor McGregor did 4.3 million PPV buys in North America*, MMA JUNKIE (December 14, 2017), available at <http://mmajunkie.com/2017/12/showtime-floyd-mayweather-vs-conor-mcgregor-pay-per-view-buys-north-america>.

²⁹ See Topel Report, ¶ 148, Exhibit 13 (columns 4-6).

³⁰ See Singer Report, ¶¶ 180-81.

³¹ See Topel Report, ¶ 146.

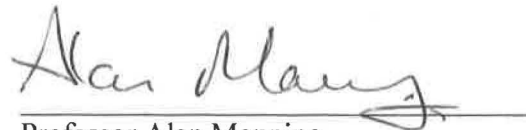
³² See Topel Report, ¶ 146.

³³ See, e.g., JEFFREY WOOLDRIDGE, *INTRODUCTORY ECONOMETRICS: A MODERN APPROACH* 318-22 (Thompson 4th ed. 2009).

regression coefficients.³⁴ In contrast, Dr. Singer's approach avoids this problem and so is the appropriate methodology.

Conclusion

31. Drs. Oyer and Topel are incorrect in asserting that labour economists do not use wage share in analysing compensation. We do under appropriate circumstances. Those circumstances arise when: (1) the goal is to compare compensation to marginal revenue product; (2) sufficient firm-level information is available to compute wage share; and (3) it is possible to ascribe a measurable part of a firm's revenue to the activities of a particular worker or group of workers. Those criteria are met for MMA fighters in this litigation. It is reasonable in this case to think that growth in marginal revenue product is proportional to growth in event revenue. Under these circumstances, wage share is an appropriate way to compare the actual compensation MMA fighters receive to the compensation they would receive in a (more) competitive labour market.



Professor Alan Manning
Executed on January 12, 2018

³⁴ *Id.* at 320 ("Generally, measurement error in a single variable causes inconsistency in all estimators. Unfortunately, the sizes, and even the directions of the biases, are not easily derived.").

EXHIBIT A: CURRICULUM VITAE

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EDUCATION AND QUALIFICATIONS

1981-84: Nuffield College, Oxford

1985: DPhil Economics

1983: MPhil Economics

1978-81: Clare College, Cambridge

1981: BA(Hons) Economics

EMPLOYMENT

Oct. 1984- Sept. 1989: Lecturer in Economics, Birkbeck College.

Oct. 1989- Sept.1993: Lecturer in Economics, London School of Economics.

Oct. 1993- Oct 1997: Reader in Economics, London School of Economics.

Oct 1997 -: Professor of Economics, London School of Economics

OTHER POSITIONS HELD AND RESPONSIBILITIES

2016-present	Chair, Migration Advisory Committee
2015-2016	Member, Migration Advisory Committee
2014-present	Fellow, Society of Labor Economists
2009-2012	Head of Economics Department, LSE
2007-2008	Visiting Scholar, MIT.
2007 - Present	Member of Editorial Board, Applied Economics Journal.
2004-2011	Member of the NHS Pay Review Body
2004-2011	Editor of the Journal of Labor Economics
2004-2011	Member, Royal Economic Society Committee on Women in Economics
2000-present	Director, Labour Markets and Community Programmes, Centre for Economic Performance, LSE.
1999-2004	PhD Programme Director, Department of Economics, LSE.
1998-1999	Visiting Research Fellow, University of California, Berkeley.
1996-2006	Co-Editor, <i>Economica</i>
1994-1995	Visiting Associate Professor, Department of Economics, Princeton
1994-2004	Member of Editorial Board, <i>New Economy</i>
1993	Visiting Professor, Université de Paris I, Panthéon-Sorbonne.
1993-1998	Associate Editor, <i>European Economic Review</i>

1992-present	Associate Editor, Labour Economics.
1991-1992	Member of 'Economic Policy' Panel.
1990	Visiting Research Fellow, Institute for International Economic Studies, University of Stockholm.
1988-2006	Research Fellow, Centre for Economic Policy Research.
1988	Visiting Assistant Professor, School of Business Administration, University of California, Berkeley,
1988-1995	Member of Editorial Board, Review of Economic Studies.

KEYNOTE LECTURES AT CONFERENCES

December 2016	Keynote Lecture, AMSE-Banque de France Conference, Aix-en-Provence
September 2016	Keynote Lecture, Tasks IV Conference, Mannheim
January 2014	Keynote Lecture, 11 th Conference on Immigration and Integration, Stockholm
September 2012	Keynote Lecture, Verein fur Socialpolitik (German Economic Association), Annual Conference, Gottingen, Germany.
June 2010	Keynote Lecture, European Society of Population Economics, Essen, Germany
October 2004	Keynote Lecture, Applied Econometrics Association Conference on Econometrics of Labour Demand, Mons Belgium.
March 2004	President's Lecture, Scottish Economic Society, Perth.
April 2003	Review of Economic Studies Lecture, Royal Economic Society, Warwick.
Sept. 2002	Adam Smith Lecture, European Association of Labour Economics, Paris.

PUBLICATIONS

Books

Monopsony in Motion: Imperfect Competition in Labor Markets, Princeton University Press, 2003.

Articles in Refereed Journals

"The Persistence of Local Joblessness", American Economic Review, forthcoming (with Michael Amior).

"How Local Are Labour Markets? Evidence from a Spatial Job Search Model", American Economic Review, 2017, 107, 2877-2907 (with Barbara Petrongolo).

"The Contribution of the Minimum Wage to U.S. Wage Inequality over Three Decades: A Reassessment", American Economic Journal (Applied), 2016, 8, 58-99 (with David H. Autor and Christopher L. Smith).

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“The Impact of Immigration on the Structure of Male Wages: Theory and Evidence from Britain”, *Journal of the European Economic Association*, 2012, 10, 150-171 (with Marco Manacorda and Jonathan Wadsworth).

“Privatization, entry regulation and the decline of labor's share of GDP: a cross-country analysis of the network industries”, *Economica*, 2012 (with Ghazala Azmat and John Van Reenen).

“Spend It Like Beckham? Inequality and Redistribution in the UK, 1983-2004”, *Public Choice*, 2012, 151, 537-563 (with Andreas Georgiadis).

“Change and Continuity Among Minority Communities in Britain”, *Journal of Population Economics*, 2011, 24, 541-568 (with Andreas Georgiadis).

“The Plant Size-Place Effect: Monopsony and Agglomeration”, *Journal of Economic Geography*, 2010, 10, 717-744.

“Understanding the Gender Pay Gap: What's Competition Got to Do with It?”, *Industrial and Labor Relations Review*, 2010, 63, 681-698 (with Farzad Saidi).

“The Economic Situation of Immigrants and their Children in France, Germany and the UK”, *Economic Journal Features* 2010, 120, F4-F30 (with Yann Algan, Christian Dustmann, and Albrecht Glitz).

“Culture Clash or Culture Club: The Identity and Values of Immigrants in Britain”, *Economic Journal Features*, 2010, 120, F72-F100 (with Sanchari Roy).

“You Can’t Always Get what you want: the Impact of the UK Jobseeker’s Agreement”, *Labour Economics*, 2009, 16, 239-250.

“The Gender Gap in Early-Career Wage Growth”, *Economic Journal*, 2008, 118, 987-1024 (with Joanna Swaffield).

“The Part-Time Pay Penalty for Women in Britain”, *Economic Journal Features* , 2008, 118, F28-F51 (with Barbara Petrongolo).

“Just Can’t Get Enough: More on Skill-Biased Change and Unemployment” *Oxford Bulletin of Economics and Statistics* , 2007, 69, 635-666 (with M.Manacorda).

“Lousy and Lovely Jobs: The Rising Polarization of Work in Britain”, *Review of Economics and Statistics*, 2007, 89,118-133 (with Maarten Goos).

“The incidence of UK housing benefit: Evidence from the 1990s reforms”, *Journal of Public Economics*, 2006, 90, 799-822 (with Stephen Gibbons).

“The Gender Gap in Unemployment Rates in OECD Countries”, *Journal of Labor Economics*, 2006, 24, 1-38 (with Ghazala Azmat and Maia Guell).

“A Generalised Model of Monopsony”, *Economic Journal*, 2006, 116, 84-100.

“A Test of Competitive Labor Market Theory: The Wage Structure among Care Assistants in the South of England”, *Industrial and Labor Relations Review*, 2004, 57, 371-385 (with Stephen Machin).

“Has The National Minimum Wage Reduced UK Wage Inequality?”, *Journal of the Royal Statistical Society Series A*, 2004, 167, 613-626. (with Richard Dickens).

“Instrumental Variables in Models with Binary Treatment Effects: A Simple Exposition”, *Contributions to Economic Analysis & Policy*, 2004, Vol. 3: No. 1, Article 9.

“Spikes and Spill-overs: The Impact of the National Minimum Wage on the Wage Distribution in a Low-Wage Sector”, *Economic Journal Conference Papers*, 2004, 114, C95-C101 (with Richard Dickens).

“Monopsony and the efficiency of labour market interventions”, *Labour Economics*, 2004, 11, 145-163.

“We Can Work It Out: The Impact of Technological Change on the Demand for Low-Skill Workers”, *Scottish Journal of Political Economy*, 2004, 51, 581-608.

“Something in the Way She Moves: A Fresh Look at an Old Gap”, *Oxford Economic Papers*, 2004, 56, 169-188 (with H.Robinson).

“Where the Minimum Wage Bites Hard: The Introduction of the UK National Minimum Wage to a Low Wage Sector”, *Journal of the European Economic Association*, 2003, 1(1), 154-180 (with Stephen Machin and Lupin Rahman).

“The Real Thin Theory: Monopsony in Modern Labour Markets”, *Labour Economics*, 2003, 10, 105-131.

“Oligopsony & Monopsonistic Competition in Labor Markets”, *Journal of Economic Perspectives*, 2002, 16, 155-174 (with V. Bhaskar and Ted To).

“Labour Supply, Search and Taxes”, *Journal of Public Economics*, 2001, 80, 409-434.

“Pretty Vacant: Recruitment in a Low-Wage Labour Market”, *Oxford Bulletin of Economics and Statistics*, 2000, 62, 747-770.

“Movin’ On Up: Interpreting the Earnings-Experience Profile”, *Bulletin of Economic Research*, 2000, 52, 261-295.

“The Effect of Minimum Wages on Employment: Theory and Evidence from Britain”, *Journal of Labor Economics*, 1999, 17, 1-23 (with R.Dickens and S.Machin).

“Estimating the Effect of Minimum Wages on Employment from the Distribution of Wages: A Critical View”, *Labor Economics*, 1998, 5, 109-134 (with R.Dickens and S.Machin).

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“Authority in Employment Contracts: A Bilateral Bargaining Approach”, *Labour Economics*, 1996, 3, 1-24.

“The Equal Pay Act as an Experiment to Test Different Theories of the Labour Market”, *Economica*, 1996, 63, 191-212.

“The Employer Size-Wage Effect: Is Monopsony the Explanation?”, *Oxford Economic Papers*, 1996, 48, 433-55 (with F.Green and S.Machin).

“How Do We Know that Real Wages are too High?”, *Quarterly Journal of Economics*, 1995, 110, 1111-1125.

“The Effect of Minimum Wages on UK Agriculture”, *Journal of Agricultural Economics*, 1995, 49, 1-19 (with R.Dickens, S.Machin, D.Metcalf, J.Wadsworth and S.Woodland).

“How Robust is the Microeconomic Theory of the Trade Union?”, *Journal of Labor Economics*, 1994, 12, 430-59.

“Minimum Wages, Wage Dispersion and Employment: Evidence from the UK Wages Councils”, *Industrial and Labor Relations Review*, 1994, 47, 319-329, (with S.Machin).

“Wages Councils: Was There a Case for Abolition?”, *British Journal of Industrial Relations*, 1993, 31, 515-530, (with R.Dickens, P.Gregg, S.Machin and J.Wadsworth).

“Wage-Setting and the Tax System: Theory and Evidence for the U.K.”, *Journal of Public Economics*, 1993, 52, 1-30 (with B.Lockwood).

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